

Case illustrated

Lawsonella clevelandensis as the causative agent of a breast abscessM. Favila Menezes^{a,b,*}, Maria José Sousa^a, P. Paixão^a, J. Atouguia^b, I. Negreiros^b, M.J. Simões^c^a CML Germano de Sousa, Portugal^b Hospital CUF Descobertas, Portugal^c Instituto Nacional Dr. Ricardo Jorge, Portugal

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ABSTRACT

Lawsonella clevelandensis is a Gram-stain-positive, partially acid-fast, anaerobic, being considered a new species within a new genus in the suborder Corynebacterineae. There are only a few cases reported worldwide. This is a fastidious microorganism, difficult to identify by conventional methods, leading to inappropriate treatments. The authors report a case of a 29-year-old woman with a 3-week evolution of a breast nodule. There was a family history of breast carcinoma. Samples were collected for histological and microbiological examination. Gram staining revealed Gram-positive filamentous bacilli, acid-fast-positive. The cultural examination revealed a *Lawsonella clevelandensis* that was confirmed by molecular methods. At the last follow up, the evolution was favorable; the abscess was resolved, with no evidence of recurrence. To our knowledge the present case was the first reported in Europe.

A 29-year-old woman was admitted to the Hospital CUF-Descobertas in Lisbon, in August 2017, with a 3-week evolution of a breast nodule in the right retroaoreolar area, 3 × 3 cm, hard, painful, but with no other inflammatory signs. There was no history of trauma or breast surgeries. A family history of breast carcinoma was reported.

Samples were collected for histological and microbiological examination. Histological examination was negative for neoplastic cells, but compatible with an acute inflammatory process. Gram staining revealed Gram-positive filamentous bacilli, acid-fast-positive by Ziehl-Neelsen staining (Figs. 1). The cultural examination was negative for anaerobic, aerobic and mycological agents. Empirical therapy with trimethoprim/sulfamethoxazole was started, *Nocardia* spp. being the first hypothesis for the causative agent. Samples were sent to a Reference Laboratory, for bacterial identification by 16S rRNA gene sequencing. A 868 bp sequence with 99% similarity with the bacterium *Lawsonella clevelandensis* was identified.

As the lesion did not improve, surgical drainage of the abscess

was performed and cultures were processed with a prolonged incubation period. After 10 days of incubation in anaerobic conditions, white and pinpoint colonies were noticed (Figs. 2). All the other cultures were negative. *Lawsonella clevelandensis* was confirmed by molecular methods in the culture, and therapy was modified to amoxicillin-clavulanic acid. At the last follow up, in early November 2017, the abscess was resolved, with no evidence of recurrence.

Lawsonella clevelandensis is a Gram-stain-positive, partially acid-fast, anaerobic, pleomorphic bacterium being considered a new species within a new genus in the suborder Corynebacterineae [1,2]. To our knowledge, there are only 6 cases reported worldwide, and the present case is the first reported in Europe. This is a fastidious microorganism, difficult to identify by conventional methods, which morphologically can mimic other agents, mainly *Nocardia* spp., leading to inappropriate therapy [3].

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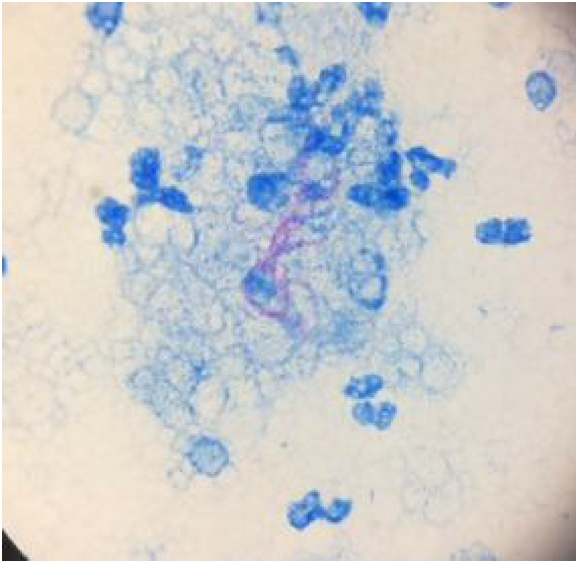


Fig. 1. Evidence of filamentous bacilli acid-fast-positive by Ziehl-Neelsen staining.

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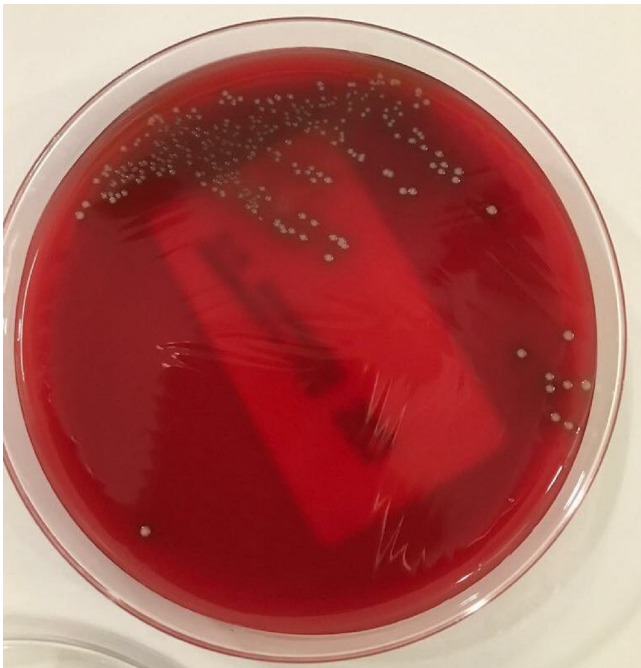


Fig. 2. Culture in anaerobic conditions.